

Shapes All Around Us



Background: Shapes are all around us in our environment. There is not just one shape that makes up our world; there are many including triangles, squares, rectangles, circles, ovals, and diamonds. You may find even more than that!

Design Challenge: After completing the "Shape Hunt," use a computer drawing program to create a picture made from different shapes. You will share your work.

Criteria:

- You must use the computer to make your shapes.
- You must use circles, squares, rectangles, and triangles.
- The shapes must make a complete picture.
- You must use the computer to add color.
- Your name must be on the page.

Materials: You may select from the items below.

- Shape books
- Computer
- Paper
- Scissors
- Paste



Targeted Standard of Learning: Mathematics K.11
Supporting Standards of Learning: Mathematics K.1, K.12, K.13, K.14, K.15
Science K.1, K.4
English K.1, K.2, K.3, K.6, K.11, K.12

Targeted Standard for Technological Literacy: 8
Supporting Standards for Technological Literacy: 3, 9, 10, 11, 17

Shapes All Around Us



Targeted Standard of Learning: Mathematics K.11

- The student will identify, describe, and draw two-dimensional (plane) geometric figures (circle, triangle, square, and rectangle).

Targeted Standard for Technological Literacy: Standard 8

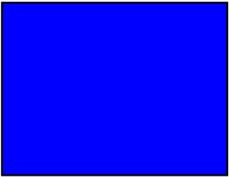
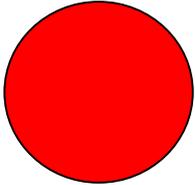
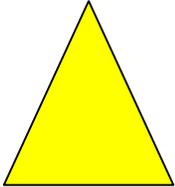
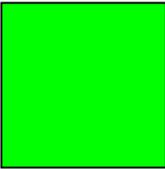
- Students will develop an understanding of the attributes of design.

Prior Knowledge & Skill	Materials & Preparation	Safety Issues	Class Management	Materials Provided	Time Management
<ul style="list-style-type: none"> • Books about shapes • Shape names • Graphs • Using computer, mouse, and program for drawing • 1:1 correspondence 	<ul style="list-style-type: none"> • Check Design Brief for recommended materials • Teacher may substitute materials. 	<ul style="list-style-type: none"> • Proper computer usage 	<ul style="list-style-type: none"> • Individual or partners • The Shape Hunt can be a whole-class event or a group event. 	<ul style="list-style-type: none"> • Design Brief • Shape Hunt sheet • Guided Portfolio • Graphing chart • Rubric • Assessment 	<ul style="list-style-type: none"> • Session 1: Introducing Design Brief and completing Shape Hunt (20 min.) • Session 2: Building (30 min.) • Session 3: Graphing shapes used (20 min.) • Session 4: Sharing and evaluating

Name _____

Shape Hunt

Write a tally mark each time you see one of these shapes in everyday objects. For example, the computer screen may be shaped like a square, so on the sheet you would write a tally mark on the row with the square.

Name _____



Shapes All Around Us

Group Members: _____

1. What is the problem? State the problem in *your own words*.

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Target Standard for Technological Literacy: 8
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Name _____

2. Brainstorm solutions.

Draw or describe some possible solutions.



Name _____

4. Test your solution.

• Did you use a circle?

YES

NO



• Did you use a square?

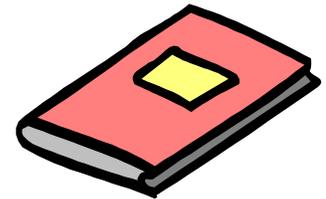
YES

NO

• Did you use a triangle?

YES

NO



• Did you use a rectangle?

YES

NO

• Does your picture have color?

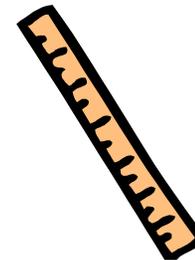
YES

NO

• Is your picture complete?

YES

NO



• Did you use the computer?

YES

NO

Name _____

5. Evaluate your solution.

Was it the best solution? Would one of your other ideas have been better? Why or why not?



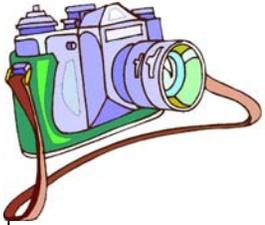
What would you have done differently?

Could you add to it to make it better? What would you add to it?

Guided Portfolio—6

Name _____

Attach a photograph of your final project here. If you do not have a photograph, draw a picture of your final project.



How would you make your project better? Draw a picture showing how it would look after you have made changes to it.



Name _____

Picture Graph

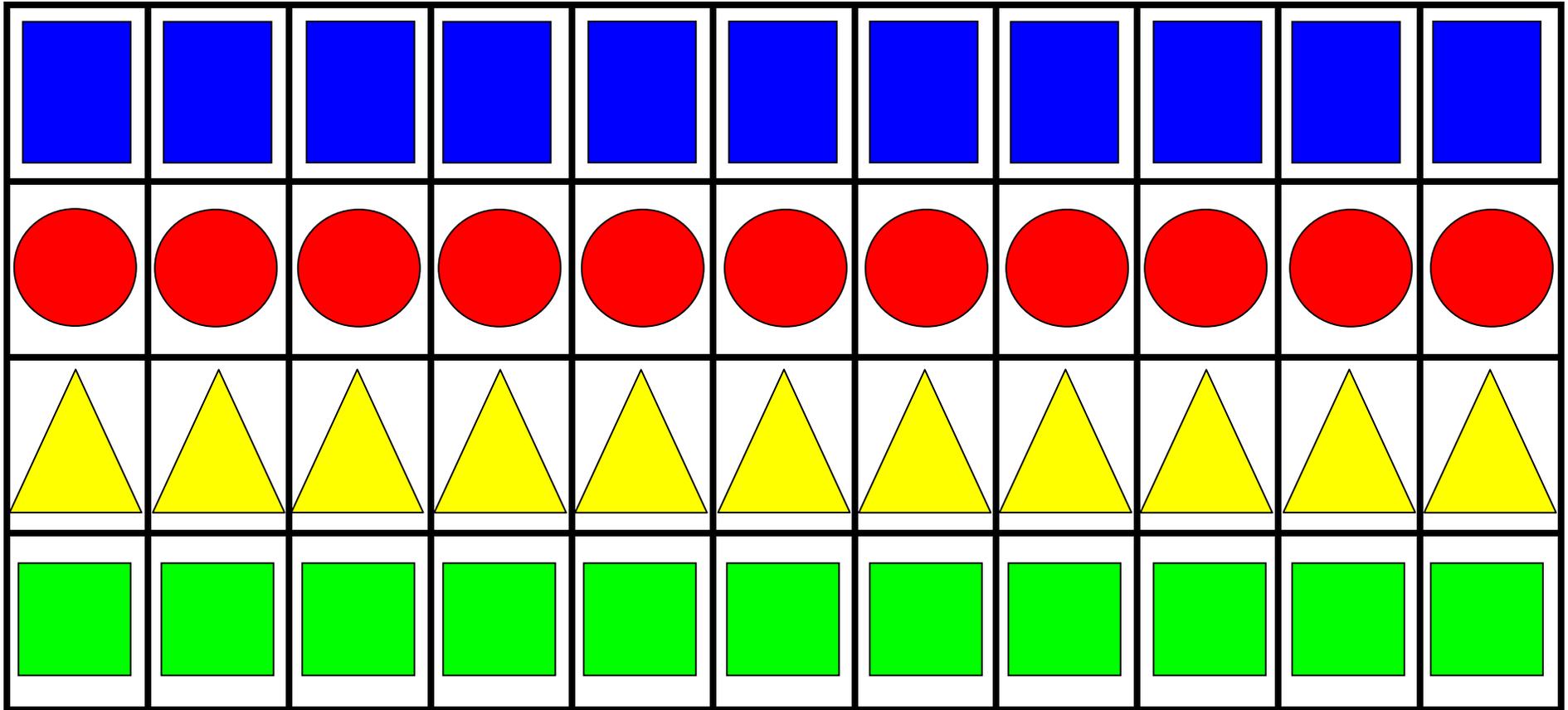
Shapes All Around Us

Using the shapes on the following page, paste the number of each shape you used in your computer drawing.

Name _____

Picture Graph

Cut out the shapes on this page to create your graph on the previous page.



Rubric for *Shapes All Around Us*

Name _____

Date _____

Student Evaluation	no evidence 0	limited understanding 1	some understanding with room for improvement 2	good understanding with room for improvement 3	substantial understanding 4
Oral Presentation: The student <ul style="list-style-type: none"> used complete sentences used descriptive words. 					
Guided Portfolio: The student <ul style="list-style-type: none"> restated the problem brainstormed solutions created a solution tested the solution evaluated the solution. 					
Team Skills: The student <ul style="list-style-type: none"> used appropriate voice encouraged team members listened to team members was involved in all aspects of the project respected team members. 					

Tested Criteria		
The student used a computer to design.	Yes	No
The student added color to picture.	Yes	No
The student used a circle, a triangle, a rectangle, and a square.	Yes	No
The student made a complete picture.	Yes	No



Standards of Learning

English (2002)

Oral Language

- K.1 The student will demonstrate growth in the use of oral language.
- a) Listen to a variety of literary forms, including stories and poems.
 - b) Participate in choral speaking and recite short poems, rhymes, songs, and stories with repeated patterns.
 - c) Participate in creative dramatics.
 - d) Begin to discriminate between spoken sentences, words, and syllables.
 - e) Recognize rhyming words.
 - f) Generate rhyming words in a rhyming pattern.
- K.2 The student will use listening and speaking vocabularies.
- a) Use number words.
 - b) Use words to describe/name people, places, and things.
 - c) Use words to describe location, size, color, and shape.
 - d) Use words to describe actions.
 - e) Ask about words not understood.
 - f) Follow one-step and two-step directions.
 - g) Begin to ask how and why questions.
- K.3 The student will build oral communication skills.
- a) Begin to follow implicit rules for conversation, including taking turns and staying on topic.
 - b) Express ideas and needs in complete sentences.
 - c) Begin to use voice level, phrasing, and intonation appropriate for language situation.
 - d) Listen and speak in informal conversations with peers and adults.
 - e) Begin to initiate conversations.
 - f) Participate in discussions about books and specific topics.

Reading

- K.6 The student will demonstrate an understanding that print makes sense.
- a) Explain that printed materials provide information.
 - b) Identify common signs and logos.
 - c) Read ten high frequency words.
 - d) Read and explain own writing and drawings.

English (2002), continued

Writing

- K.11 The student will write to communicate ideas.
- Draw pictures and/or use letters and phonetically spelled words to write about experiences, stories, people, objects, or events.
 - Write left to right and top to bottom.
- K.12 The student will explore the uses of available technology for reading and writing.

Science (2003)

Scientific Investigation, Reasoning, and Logic

- K.1 The student will conduct investigations in which
- basic properties of objects are identified by direct observation;
 - observations are made from multiple positions to achieve different perspectives;
 - objects are described both pictorially and verbally;
 - a set of objects is sequenced according to size;
 - a set of objects is separated into two groups based on a single physical attribute;
 - nonstandard units are used to measure common objects;
 - a question is developed from one or more observations;
 - picture graphs are constructed using 10 or fewer units;
 - an unseen member in a sequence of objects is predicted; and
 - unusual or unexpected results in an activity are recognized.

Matter

- K.4 The student will investigate and understand that the position, motion, and physical properties of an object can be described. Key concepts include
- colors (red, orange, yellow, green, blue, purple), white, and black;
 - shapes (circle, triangle, square, and rectangle) and forms (flexible/stiff, straight/curved);
 - textures (rough/smooth) and feel (hard/soft);
 - relative size and weight (big/little, large/small, heavy/light, wide/thin, long/short); and
 - position (over/under, in/out, above/below, left/right) and speed (fast/slow).

Mathematics (2001)

Number and Number Sense

- K.1 The student, given two sets containing 10 or fewer concrete items, will identify and describe one set as having more, fewer, or the same number of members as the other set, using the concept of one - to - one correspondence.

Geometry

- K.11 The student will identify, describe, and draw two-dimensional (plane) geometric figures (circle, triangle, square, and rectangle).
- K.12 The student will describe the location of one object relative to another (above, below, next to) and identify representations of plane geometric figures (circle, triangle, square, and rectangle) regardless of their position and orientation in space.

Mathematics (2001), continued

K.13 The student will compare the size (larger, smaller) and shape of plane geometric figures (circle, triangle, square, and rectangle).

Probability and Statistics

K.14 The student will gather data relating to familiar experiences by counting and tallying.

K.15 The student will display objects and information, using objects graphs, pictorial graphs and tables.

Standards for Technological Literacy

Standard 3: Students will develop an understanding of the relationships among technologies and the connections between technology and other fields of study.

Standard 8: Students will develop an understanding of the attributes of design.

Standard 9: Students will develop an understanding of engineering design.

Standard 10: Students will develop an understanding of the role of troubleshooting, research and development, invention and innovation, and experimentation in problem solving.

Standard 11: Students will develop the abilities to apply the design process.

Standard 17: Students will develop an understanding of and be able to select and use information and communication technologies.